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PATENT APPLICATION

ATTORNEY DOCKET NO. 200312536-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): David Punsalan et al.

Confirmation No.: 5126

Application No.: 10/705,486

Examiner: WILKINS III, Harry D.

Filing Date: November 10, 2003

Group Art Unit: 1795

Title: A System and a Method for Manufacturing an Electrolyte Using Electro Deposition

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEFTransmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on May 23, 2008☒ The fee for filing this Appeal Brief is \$510.00 (37 CFR 41.20).☐ No Additional Fee Required.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:☐ 1st Month
\$120☐ 2nd Month
\$460☐ 3rd Month
\$1050☐ 4th Month
\$1640☐ The extension fee has already been filed in this application.☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of \$ 510. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 Inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

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Date of facsimile: July 22, 2008

Typed Name: Rebecca R. Sokow

Signature: 

Respectfully submitted,

David Punsalan et al.

By: 

Steven L. Nichols

Attorney/Agent for Applicant(s)

Reg No.: 40,326

Date: July 22, 2008

Telephone: 801-572-8086

Rev 10/07 (ApB/Brief)

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DUPLICATE

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Respectfully submitted,

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Steven L. Nichols

Attorney/Agent for Applicant(s)

Reg No.: 40,326

Date: July 22, 2008

Telephone: 801-572-8066

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Application No.: 10/705,486

Attorney Docket No.: 200312536-1

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Rebecca R. Schow

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Transmitted, herewith, are the following documents:

1. Transmittal Letter of Appeal Brief with Duplicate Copy (2 pages)
2. Certificate of Transmission (1 page)
3. Appeal Brief (26 pages)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Patent Application of

David Punsalan et al.

Application No.: 10/705,486

Filed: November 10, 2003

For: A System and a Method for
Manufacturing an Electrolyte
Using Electro Deposition

Group Art Unit: 1795

Examiner: Wilkins III, Harry D.

Confirmation No.: 5126

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
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Sir:

This is an Appeal Brief under Rule 41.37 appealing the decision of the Primary Examiner dated March 31, 2008 (the "final Office Action" or "Action"). Each of the topics required by Rule 41.37 is presented herewith and is labeled appropriately.

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I. Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

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II. Related Appeals and Interferences

There are no appeals or interferences related to the present application of which the Appellant is aware.

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III. Status of Claims

Claims 19-52 were withdrawn from consideration under the imposition of a previous Restriction Requirement and cancelled without prejudice or disclaimer. Claim 2 has also since been cancelled without prejudice or disclaimer. Thus, claims 1, 3-18 and 53-73 are currently pending.

Claims 17 and 64-72 have been allowed and are not at issue in this appeal. Consequently, these claims do not appear in the following Appendix.

Claims 1, 3-16, 18, 53-63 and 73 stand finally rejected. Accordingly, Appellant appeals from the final rejection of claims 1, 3-16, 18, 53-63 and 73, which claims are presented in the Appendix.

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IV. Status of Amendments

No amendments have been filed subsequent to the final Office Action of March 31, 2008, from which Appellant takes this appeal.

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V. Summary of Claimed Subject Matter

Appellant's independent claims recite the following.

Claim 1 recites:

A method of forming an electrolyte (*Appellant's specification, title*), comprising:
removably coupling (420) a perimeter support (210) to a temporary substrate (350) (*Appellant's specification, paragraph 0028*); and
electrodepositing (430) a structural material and an electrolyte material to form an electrolyte composite film (220) on said temporary substrate (350) such that a perimeter of said film is supported by said perimeter support (210) (*Appellant's specification, paragraph 0028*).

Claim 57 recites:

A method of forming a fuel cell electrolyte (*Appellant's specification, title*), comprising: disposing a temporary substrate (350) in a solution (370) already comprising polymer units (530) (*Appellant's specification, paragraph 0024*); and electrodepositing said polymer units on said temporary substrate (350) so as to form said fuel cell electrolyte (220) on said temporary substrate (350) (*Appellant's specification, paragraph 0028*).

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VI. Grounds of Rejection to be Reviewed on Appeal

The final Office Action raised the following grounds of rejection.

(1) Claims 57 and 58 were rejected as anticipated under 35 U.S.C. § 102(a) or (e) by U.S. Patent App. Pub. No. 2003/0134177 to Furuya ("Furuya").

(2) Claims 1, 3-16, 18, 53-63 and 73 were under 35 U.S.C. § 103(a) over the combined teachings of U.S. Patent No. 5,281,327 to Honda et al. ("Honda"), U.S. Patent No. 6,059,943 to Murphy et al. ("Murphy") and U.S. Patent App. Pub. No. 2003/0071259 to Yoshida ("Yoshida") with evidence from Mesite et al. (US 3,627,859).

According, Appellant hereby requests review of each of these grounds of rejection in the present appeal.

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VII. Argument

(1) Claims 57 and 58 are patentable over Furuya:

Independent claim 57 recites: "A method of forming a fuel cell electrolyte, comprising: disposing a temporary substrate in a solution already comprising polymer units; and electrodepositing said polymer units on said temporary substrate so as to form said fuel cell electrolyte on said temporary substrate." As will be known to those skilled in the art, a typically fuel cell comprises two electrodes, an anode and cathode, that sandwich an electrolyte between them. Claim 57 recites a method of forming such a fuel cell *electrolyte*.

In contrast, Furuya teaches a "method of manufacturing a gas diffusion *electrode* for use as an oxygen cathode in ... a fuel cell." (Furuya, abstract). Thus, Furuya is directed to manufacturing an entirely different component of a fuel cell assembly than is recited by claim 57. There is absolutely nothing in Furuya about forming a fuel cell *electrolyte*. Consequently, Furuya does not and cannot teach or suggest the method of claim 57.

In response, the final Office Action argues that "the recitation of 'fuel cell electrolyte' is the intended use of the claimed film formed by the method. As such it is given little patentable weight." (final Office Action, p. 8). This argument, however, is entirely inapplicable to a *method* claim. It should be noted that in claim 57 Appellant is claiming a *method*, not just the resulting film or composition of matter.

The principle that the intended use of a device is not given patentable weight applies only to apparatus claims, *not* method claims. Since a method or process *is* the application of techniques and tools to a particular use, it would be illogical and unreasonable to exclude that use from the consideration of whether that method or process is patentable.

Consequently, the MPEP clearly states that: "All the limitations of a claim must be considered when weighing the differences between the claimed invention and the prior art in

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determining the obviousness of a *process or method claim*.” (MPEP § 2116.01) (emphasis added). The MPEP also states that: “The materials on which a process is carried out must be accorded weight in determining the patentability of a process. *Ex parte Leonard*, 187 USPQ 122 (Bd. App. 1974).” (MPEP § 2116). By extension, the product produced by the process must also be accorded weight in determining the patentability of that process. Consequently, it is clearly of patentable significance that Appellant recites a method of forming a fuel cell electrolyte rather than a fuel cell electrode as taught by Furuya.

The final Office Action also argues that the “film formed by Furuya included a fluoro-resin matrix with embedded carbon black which would have been capable of being used as a fuel cell electrolyte.” (final Office Action, p. 8). This argument fails for at least two reasons. First, there is no evidence of record to support this conclusion. Moreover, even if the film taught by Furuya could conceivably be used as a fuel cell electrolyte, that does not mean that it would do so effectively or efficiently or that one of skill in the art would have considered using it as such. Second, this argument is pure hindsight offered in an attempt to distort Furuya into being relevant prior art. Furuya did not teach, suggest or even mention any method intended for forming a fuel cell electrolyte, and there is no evidence of record that one of skill in the art would have considered Furuya as teaching a method of forming a fuel cell electrolyte.

In sum, Furuya does not teach or suggest the claimed method of forming a fuel cell electrolyte as opposed to an electrode. “A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). See M.P.E.P. § 2131. For at least these reasons, the

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rejection based on Furuya of claim 57 and its dependent claim should be reconsidered and withdrawn.

(2) Claims 1, 3-16, 18, 53-63 and 73 are patentable over the cited prior art:

Claim 1:

Claim 1 recites:

A method of forming an electrolyte, comprising:
removably coupling a perimeter support to a temporary substrate; and
electrodepositing a structural material and an electrolyte material to form an electrolyte composite film on said temporary substrate such that a perimeter of said film is supported by said perimeter support.
(Emphasis added).

Support for the amendments to claim 1 can be found in Appellant's originally filed specification at, for example, paragraphs 0028 and 0029.

Thus, claim 1 recites "electrodepositing a structural material and an electrolyte material to form an electrolyte composite film on said temporary substrate." In contrast, the current Office Action fails to demonstrate how or where the cited prior art teaches electrodepositing all of the multiple components of an electrolyte *composite* film.

Honda does not teach or suggest a method including any electrodeposition. Rather, Honda teaches electro-polymerization. (Honda, abstract). The final Office Action argues that "electro-polymerization falls within Applicant's broad definition of the term electrodeposition." (final Office Action, p. 9). This is incorrect when there is no *deposition* of material.

Electro-polymerization is the creating of a polymer using an electric field applied to a material *already present*. In contrast, electrodeposition, as commonly understood and as

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defined by Appellant, involves the *deposition* or precipitation of material to the target location. Thus, electro-polymerization is changing the chemical nature of material already present, whereas electrodeposition is the deposition or precipitation of material to the target location that was not there previously. Consequently, Honda's process of electro-polymerization is not necessarily within Appellant's definition of electrodeposition as alleged without support by the final Office Action. In sum, there is no evidence of record that Honda teaches a method of electrodeposition as claimed.

Moreover, Honda only teaches the formation of a polymer layer from monomer components. (Honda, abstract). Honda does not appear to teach or suggest an electrolyte *composite* film comprising both a structural material and an electrolyte material. According to Honda,

Disclosed is a method of producing a conductive polymer composite comprising a resin layer and a conductive polymer layer formed on the resin layer, which comprises the steps of dissolving, in a monomer component (a) which is polymerizable without condensation reaction, a monomer component (b) capable of undergoing electrolytic polymerization to give at least one conductive polymer and an electrolyte (c), introducing the resulting solution into an electrolytic polymerization cell, applying a direct current voltage across the cell to electrolytically polymerize the component (b) to thereby provide the conductive polymer layer, and thereafter subjecting the component (a) to polymerization in the cell to provide the resin layer.

(Honda, abstract).

Thus, Honda teaches the electro-polymerization of monomers already in intimate contact with an electrode rather than any electro-deposition as recited in claim 1. (Honda, col. 2, lines 60-65). Moreover, Honda merely teaches the formation of a polymer layer, not an electrolyte composite film comprising both structural material and electrolyte material as recited in claim 1. Consequently, Honda completely fails to teach or suggest the claimed method including "*electrodepositing a structural material and an electrolyte material to form*

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an electrolyte composite film on said temporary substrate such that a perimeter of said film is supported by said perimeter support.” (Emphasis added).

Murphy, on the other hand, does teach the formation of a composite membrane. (Murphy, abstract). However, Murphy also does not teach or suggest any process that includes electro-deposition. At col. 11, line 63 to col. 12, line 51, Murphy lists “a variety of ways” to make a composite membrane. However, none of these methods include electro-deposition. Nor has the Office Action argued that Murphy teaches electro-deposition of the multiple components needed to form a composite film as claimed.

The Office now cites Yoshida as teaching that “the deposition of ceramic particles can occur simultaneously with deposition of polymeric particles by an electrophoretic mechanism.” (Action, p. 5). This is completely incorrect.

Yoshida relates to electronic paper. (Yoshida, paragraph 0003). Electronic paper is also known as an “electrophoretic display.” In this context, “electrophoretic” has absolutely nothing to do with electro-deposition. Rather, in an electrophoretic display device, electrical writing signals are initially applied to the display device to cause each pixel to appear, for example, light or dark, in accordance with the image to be displayed. After the pixels of the display have collectively achieved the desired appearance, no further power is required to maintain the display of the resulting image. Each pixel corresponds to a cell in the electrophoretic display. In each cell, a quantity of tiny particles is dispersed in a host fluid. In some cases, the liquid host fluid is a liquid crystal (LC) material. The particles are electrically charged and can be manipulated to migrate through the host fluid in response to an applied electric field. This migration of the charged particles will change the optical state or appearance of that cell, for example, causing the cell to appear light or dark. There are

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different mechanisms that allow the cells to change appearance in response to migration of the charged particles.

Along these lines, For example, Yoshida teaches a

sheet-like display device described in the item (1), which uses, as a display element used for the sheet-like display function layer, an electrophoretic display device, and wherein a dispersion system containing electrophoretic particles is sealed between the pair of opposing electrode plates at least one of which is transparent, and a distribution state of the electrophoretic particles inside the dispersion system is changed under the operation of a display control voltage applied between the electrodes so as to impart the change to the optical absorption or optical reflection characteristics and to exhibit the predetermined display operation."

(Yoshida, paragraph 0075).

Thus, when properly understood, Yoshida has nothing whatsoever to do with electro-deposition and absolutely does not teach or suggest the simultaneous deposition of ceramic and polymer particles as supposed by the Office Action.

In this regard, the Office Action cites to Yoshida at paragraphs 0345-0346. This portion of Yoshida, in its entirety, reads as follows.

[0344] A sheet-like display device having another construction and its production example will be explained with reference to FIG. 19.

[0345] The illustrated sheet-like display device comprises a display portion and a power source portion. The display portion has a construction in which a large number of microcapsules 203 encapsulating in advance a dispersion system 205, that contains electrophoretic particles 204 dispersed in a dispersion medium, by a microcapsule encapsulation method are interposed between transparent electrodes 202 and 202' formed on the opposing surfaces (ITO vacuum deposition surfaces) of transparent members 201 and 201' formed of a pair of ITO vacuum deposition PET (polyethylene terephthalate) films. An aluminum vacuum deposition layer is formed on the side opposite to the ITO vacuum deposition surface of one 201' of the transparent members. The transparent electrodes 201 and 201' use the electrically conductive organic compound according to the invention.

[0346] Examples of the electrophoretic particles 204 of the dispersion system 205 encapsulated in the microcapsules 203 include ordinary colloidal particles, metal fine particles, organic or inorganic dyes, organic or inorganic pigments, ceramic or glass fine particles, and fine particles of suitable resins and rubbers. Further, these particles can be used in combination, without causing any problem.

(Yoshida, paragraphs 0344-0346).

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When read with an understanding of the subject matter that the Yoshida reference addresses, it becomes clear that there is no teaching, suggestion or even a mention of an electro-deposition process here. Moreover, this portion of Yoshida clearly does not teach or suggest the simultaneous electro-deposition of ceramic and polymer particles as incorrectly supposed by the Office Action.

Mesite is cited solely for the teachings the polyvinylidene fluoride "was known to be effect as an electrolyte in fuel cells." (Action, p. 5).

Consequently, none of the cited prior art references teach or suggest a method of forming an electrolyte in which electro-deposition is used to deposit, not just a polymer film, but an electrolyte *composite* film composed of both electrolyte and structural components on a substrate.

Under the analysis required by *Graham v. John Deere*, 383 U.S. 1 (1966) to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present instance, as demonstrated above, the scope of the prior art, as evidenced by Honda, Murphy, Yoshida and Mesite, did not include the claimed method of forming an electrolyte including "electrodepositing an electrolyte *composite* film on said temporary substrate." (Emphasis added). There is no teaching in the cited prior art of electrodepositing the multiple components of a *composite* electrolyte film as recited in claim 1.

Moreover, Appellant's specification describes at length the advantages provided by this significantly different claimed method. For example, "because the above-mentioned process forms the polymer electrolyte material while in an aqueous solution and with little

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application of heat, the likelihood of dehydration of the polymer electrolyte is reduced. This reduction in the likelihood of dehydration of the polymer electrolyte may reduce the detrimental impact of the re-hydration process of the MEA during operation, specifically in regards to electrolyte layer adhesion, overall mechanical integrity, and susceptibility to fuel crossover." (Appellant's specification, paragraph 0035).

Consequently, because Appellant's claimed method in claim 1 is outside the scope and content of the prior art and provides advantages not recognized or available in the prior art, Honda, Murphy, Yoshida and Mesite cannot support a rejection of claim 1 under § 103 and *Graham*.

In other words, "[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03. Accord. M.P.E.P. § 706.02(j). Because none of the cited prior art references teach or suggest electrodepositing the multiple components of a *composite* electrolyte film as recited in claim 1, the rejection of claim 1 and its dependent claims should be reconsidered and withdrawn.

Claim 3:

Additionally, various dependent claims recite subject matter that is further patentable over the teachings of Honda, Murphy, Yoshida and Mesite. Specific, non-exclusive examples follow.

Claim 3 recites "wherein said electrolyte material comprises perfluorosulfonate ionomer particles." The recent Office Action fails to indicate how or where the cited prior art teaches this subject matter. For at least this additional reason, the rejection of claim 3 should be reconsidered and withdrawn.

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Claim 9:

Claim 9 recites "wherein said metallic material comprises nickel." In contrast, the cited references do not appear to teach or suggest this subject matter, nor has the Office Action cited such a teaching in the cited prior art. For at least this additional reason, the rejection of claim 9 should be reconsidered and withdrawn.

Claim 11

Claim 11 recites "wherein removably coupling said perimeter support comprises depositing a release material on said temporary substrate prior to electrodepositing said electrolyte composite film." The recent Office Action concedes that the cited prior art fails to teach the claimed depositing of a release material. (Action, p. 6). However, the Action nevertheless concludes that the subject matter of claim 11 is obvious in view of the cited prior art. (*Id.*).

Appellant notes that the Office Action has not indicated where the cited prior art teaches removing a film or membrane from the substrate on which it was formed. Consequently, there is no apparent need in the prior art for the claimed release material. Thus, the Office has failed to demonstrate any teaching of the claimed release material or any need in the art that would lead to the use of the claimed release material. For at least these additional reasons, the rejection of claim 11 should be reconsidered and withdrawn.

Claim 12:

Claim 12 recites "electrodepositing a layer of ions on said electrolyte composite film." This concept is not taught or suggested by the cited prior art. Moreover, the recent Office

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Action does not appear to address claim 12 or to explain how or where this subject matter is taught by the prior art. For at least these additional reasons, the rejection based on Honda of claims 12, 13, 15 and 16 should be reconsidered and withdrawn.

Claim 14:

Claim 14 recites "wherein said layer of ions comprises at least one of perfluorosulfonate ionomers or sulfonate polyetherketones." The recent Office Action fails to indicate how or where the cited prior art teaches this subject matter. For at least this additional reason, the rejection of claim 14 should be reconsidered and withdrawn.

Claim 18:

Claim 18 recites "wherein electrodepositing said electrolyte composite film comprises electrophoretic deposition and electrodepositing said layer of ions comprises electrolytic deposition." The recent Office Action fails to indicate how or where the cited prior art teaches this subject matter. For at least this additional reason, the rejection of claim 18 should be reconsidered and withdrawn.

Claim 53:

Claim 53 recites "simultaneously electrodepositing electrolyte particles and structural particles to form a single layer of said electrolyte composite film." As noted above, there is no reference of record that teaches or suggests electrodepositing structural particles along with electrolyte particles to form a single layer of an electrolyte composite film. For at least this additional reason, the rejection of claim 53 should be reconsidered and withdrawn.

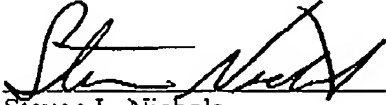
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In view of the foregoing, it is submitted that the final rejection of the pending claims is improper and should not be sustained. Therefore, a reversal of the Rejection of March 31, 2008 is respectfully requested.

Respectfully submitted,

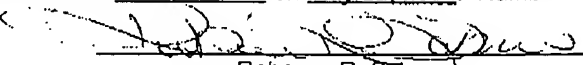
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VIII. CLAIMS APPENDIX

1. (previously presented) A method of forming an electrolyte, comprising:
removably coupling a perimeter support to a temporary substrate; and
electrodepositing a structural material and an electrolyte material to form an
electrolyte composite film on said temporary substrate such that a perimeter of said film is
supported by said perimeter support.
2. (cancelled)
3. (previously presented) The method of claim 1, wherein said electrolyte material
comprises perfluorosulfonate ionomer particles.
4. (previously presented) The method of claim 1, wherein said structural material
comprises ceramic particles.
5. (previously presented) The method of claim 1, wherein said perimeter support
comprises a gasket that is immersed in an electrodeposition solution on said temporary
substrate.
6. (original) The method of claim 1, wherein said temporary substrate
comprises an electrode.
7. (original) The method of claim 6, wherein said electrode comprises a
negatively charged electrode.

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8. (original) The method of claim 1, wherein said temporary substrate comprises a metallic material.
9. (original) The method of claim 8, wherein said metallic material comprises nickel.
10. (original) The method of claim 8, wherein said metallic material comprises stainless steel.
11. (original) The method of claim 1, wherein removably coupling said perimeter support comprises depositing a release material on said temporary substrate prior to electrodepositing said electrolyte composite film.
12. (original) The method of claim 1, wherein said electrodepositing said film comprises electrophoretic deposition.
13. (original) The method of claim 1, further comprising electrodepositing a layer of ions on said electrolyte composite film.
14. (original) The method of claim 13, wherein said layer of ions comprises at least one of perfluorosulfonate ionomers or sulfonate polyetherketones.
15. (original) The method of claim 13, wherein said electrodepositing of said layer of ions comprises electrolytic deposition.

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16. (original) The method of claim 13, wherein electrodepositing said layer of ions seals said electrolyte composite film.

17. (allowed)

18. (original) The method of claim 13, wherein electrodepositing said electrolyte composite film comprises electrophoretic deposition and electrodepositing said layer of ions comprises electrolytic deposition.

19-52. (cancelled)

53. (previously presented) The method of claim 1, further comprising simultaneously electrodepositing electrolyte particles and structural particles to form a single layer of said electrolyte composite film.

54. (previously presented) The method of claim 1, wherein said electrolyte composite film conducts ions when moisture is present.

55. (previously presented) The method of claim 1, further comprising forming a cathode and anode on opposite sides of said electrolyte film.

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56. (previously presented) The method of claim 1, wherein said electrodepositing is performed by placing said temporary substrate in a solution already comprising polymer units and attracting those polymer units to said temporary substrate using an electric field.

57. (previously presented) A method of forming a fuel cell electrolyte, comprising: disposing a temporary substrate in a solution already comprising polymer units; and electrodepositing said polymer units on said temporary substrate so as to form said fuel cell electrolyte on said temporary substrate.

58. (previously presented) The method of claim 57, wherein said polymer units comprise perfluorosulfonate ionomer particles.

59. (previously presented) The method of claim 57, wherein said solution further comprises ceramic particles, said electrodepositing also causing said ceramic particles to migrate to said temporary substrate such that said fuel cell electrolyte is a composite of said polymer units and said ceramic particles.

60. (previously presented) The method of claim 57, further comprising disposing a perimeter support on said temporary substrate which provides perimeter support for said fuel cell electrolyte.

61. (previously presented) The method of claim 57, further comprising depositing a release material on said temporary substrate prior to forming said fuel cell electrolyte, said

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release material facilitating removal of said fuel cell electrolyte from said temporary substrate.

62. (previously presented) The method of claim 57, further comprising electrodepositing a layer of ions on said electrolyte composite film, wherein said layer of ions is thinner than said fuel cell electrolyte.

63. (previously presented) The method of claim 62, wherein said layer of ions comprises at least one of perfluorosulfonate ionomers or sulfonate polyetherketones.

64-72. (allowed)

73. (previously presented) The method of claim 1, wherein said electrodepositing said electrolyte composite film couples said composite film to said perimeter support which supports a perimeter of said composite film.

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IX. Evidence Appendix

None

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X. Related Proceedings Appendix

None

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XI. Certificate of Service

None